

# PATENT COOPERATION TREATY

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23 SEP 2004

RECEIVED

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**DUE DATE**

5.4.05

**ENTERED**

**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 10 September 2004 (10.09.2004)

Applicant's or agent's file reference  
FP2262

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
PCT/SG 2004/000168

International filing date (day/month/year)  
4 June 2004 (04.06.2004)

Priority Date (day/month/year)  
5 June 2003 (05.06.2003)

International Patent Classification (IPC) or both national classification and IPC  
C12N 15/12, 15/63, C07K 7/00, 14/435, A61K 38/00, A61P 7/02, 9/10

Applicant

NATIONAL UNIVERSITY OF SINGAPORE

1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion
- ☐ Cont. No. II Priority
- ☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Cont. No. IV Lack of unity of invention
- ☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Cont. No. VI Certain documents cited
- ☐ Cont. No. VII Certain defects in the international application
- ☐ Cont. No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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Continuation No. I

IAP9 Rec'd PCT/PTO 05 DEC 2005

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion was carried out on the basis of:

- a. type of material: a sequence listing
- b. format of material: in computer readable form
- c. time of filing/furnishing: contained in the international application as filed

Continuation No. V

**Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims 1-40	YES
	Claims ----	NO
Inventive step (IS)	Claims 1-23, 25, 29, 30, 37, 38	YES
	Claims 24, 26-28, 31-36, 39, 40	NO
Industrial applicability (IA)	Claims 1-40	YES
	Claims ----	NO

2. Citations and explanations:

Indian heart journal, 1986, Vol. 38, No. 5, pages 369-372 concerns the reduction of cholesterol in acute myocarditis produced by scorpion (*Buthus tamulus*) venom injection. Claims 1-23 and 25-40 concern reductase inhibiting peptides from the scorpion *Buthus martensii* Karsch. These peptides are not obvious from the above mentioned document. Claim 24 concerns isolated peptides which have the function of HMGCoA reductase inhibitor e.g. for reducing accumulation of cholesterol. From of the molecular weights of the peptides it seems clear that unity is given because these are the molecular weights of the peptides from a scorpion (see claims 22 and 25). However, a person skilled in the art knows that usually enzymes or peptides with enzyme function are involved in biological processes and he knows from Indian heart journal, 1986, Vol. 38, No. 5, pages 369-372 that scorpion venom

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compounds reduce cholesterol in mammals. Thus the person skilled in the art will try to find similar compounds in other scorpions. Therefore, the subject-matter of claim 24 is obvious. In so far as the claims 26-28, 31-36, 39 and 40 are dependent from claim 24 they are also obvious.

Comparative Biochemistry and Physiology, Part B: Biochemistry & Molecular Biology (2002), 131B(4), pages 749-756 deals with peptides from the scorpion *Buthus martensii* Karsch. But this document does not concern cholesterol und diseases caused by cholesterol such as arteriosclerosis or stroke.

EP 671171 A1 relates to HMG COA reductase inhibitors for the treatment of cardiovascular events. Venoms from scorpions are not mentioned therein.

Accordingly novelty is recognized for the subject-matters of all claims. Claims 1-23, 25, 29, 30, 37 and 38 comply with the requirements of inventive step.

The industrial applicability for the subject-matters of all claims is self-evident.

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